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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/009,248	01/20/98	OSAWA	K P972636

EXAMINER	
GRAYBILL,D	
ART UNIT	**PAPER NUMBER**
2814	

DATE MAILED: 03/30/00

MMC2/0330

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/009,248	Osawa et al.
Examiner	**Group Art Unit**
David E. Graybill	2814

☒ Responsive to communication(s) filed on *31 Jan 2000*

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-12* is/are pending in the applicat

Of the above, claim(s) *7-9* is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-6 and 10-12* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02. The oath or declaration is defective because: The full name of each inventor (family name and at least one given name together with any initial) has not been set forth. Specifically, the full name of Kenji Ohsawa, as signed, has not been set forth.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6 and 10-12 are rejected under 35 U.S.C. 102(e) as anticipated by Ohsawa or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ohsawa (5756377).

At column 4, lines 25-29; column 5, lines 8-11; column 6, lines 53-56; column 7, line 67 to column 8, line 7; and column 9, line 18 to column 10, line 17 Ohsawa teaches:

1. A semiconductor device comprising: a semiconductor chip 4 having a plurality of electrode pads formed at a periphery of a front surface thereof; a wiring film formed on a front surface side of said semiconductor chip by laminating an insulation film 6 on a lead 13 pattern; an outer connection terminal 7 formed so as to protrude above said wiring film; a plurality of leads 13 extending from said wiring film and connected to the electrode pads on said semiconductor chip at extended tip ends 13i thereof; an external ring 10 provided so as to surround said semiconductor chip and formed with a plurality of through holes or blind holes positioned entirely outside of a perimeter edge of the semiconductor chip; and a sealing resin 8 filled between said semiconductor chip and said external ring.

2. A semiconductor device according to claim 1, further comprising an outwardly expanded open portion formed on an inner circumferential surface of said external ring and positioned on a rear surface side of said semiconductor chip.

3. A lead frame comprising: a wiring film formed by laminating an insulation film 6 on a lead 13 pattern; an external connection terminal 7 formed so as to protrude above said wiring film; a plurality of leads 13 extending from said wiring film and forming connecting portions to electrode pads on a semiconductor chip 4 at extended tip ends 13i thereof; and an external ring 10 provided outside said wiring film, having an opening portion capable of housing said semiconductor chip and formed with a plurality of through holes or blind holes positioned entirely outside of a perimeter edge of the semiconductor chip when the opening portion houses the semiconductor chip.

4. A lead frame according to Claim 3, further comprising an outwardly expanded open portion formed on an inner circumferential surface of said opening portion of said external ring and positioned on a rear surface side of said semiconductor chip.

5. An electronic apparatus including a printed wiring board loaded with a semiconductor chip, said semiconductor device comprising: a semiconductor chip 4 having a plurality of electrode pads formed at a periphery of a front surface thereof; a wiring film formed on a front surface side of said semiconductor chip by laminating an insulation film 6 on lead 13 patterns; an outer connection terminal 7 formed so as to protrude above said wiring film; a plurality of leads 13 extending from said wiring film and connected to the electrode pads on said semiconductor chip at extended tip ends 13i thereof; an external ring 10 provided so as to surround said semiconductor chip and, formed with a plurality of through holes or blind holes positioned entirely outside of a perimeter edge of the semiconductor chip; and a sealing resin 8 filled between said semiconductor chip and said external ring, wherein said external connection terminal and an electrode on said printed wiring board are connected.

6. An electronic apparatus according to Claim 5, further comprising an outwardly expanded open portion formed on an inner circumferential surface of said external ring and positioned on a rear surface side of said semiconductor chip.

10. A semiconductor device according to claim 1, wherein the external ring has an open top and an open bottom and is entirely spaced away from the semiconductor chip.

11. A lead frame device according to claim 3, wherein the external ring has an open top and an open bottom and is entirely spaced away from the semiconductor chip when the opening portion houses the semiconductor chip.

12. An electronic apparatus according to claim 5, wherein the external ring has an open top and an open bottom and is entirely spaced away from the semiconductor chip.

Although, as cited, Ohsawa teaches all of the limitations of the instant invention, including a device and an apparatus formed with a plurality of through holes or blind holes positioned entirely outside of a perimeter edge of the semiconductor chip, and a device comprising wherein the external connection terminal and an electrode on a printed wiring board are connected, these limitations do not appear to be explicitly taught in one embodiment containing all of the instant limitations. Nonetheless, in the alternative, it would have been obvious to combine these particular limitations of the embodiments of Ohsawa because it would facilitate miniaturization, manufacturing convenience and external electrical connection.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to the group receptionist at (703) 308-1782.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m..

The fax phone number for group 2800 is (703)305-3431.

David E. Graybill
Primary Examiner
Art Unit 2814

D.G.